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10/585,275

07/05/2006

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EXAMINER

CHERVINSKY, BORIS LEO

ART UNIT

PAPER NUMBER

2835

MAIL DATE

DELIVERY MODE

08/25/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|------------------------------------|--|
| Office Action Summary | Application No. 10/585,275 | Applicant(s) DEAN ET AL. | |
| | Examiner Boris L. Chervinsky | Art Unit 2835 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :4/22/09; 10/27/08;7/1/09; 1/30/09;11/10/08 -6.

DETAILED ACTION

Claim Objections

1. Claims 17 and 18 are objected to because of the following informalities: the preamble of the claims must be the same as the independent claim 15. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2, 4,5,6,7,10,11,15-18,20-22,24,25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by McCormick et al., Pat. 5,909,057.

McCormick discloses a heat spreader comprising a base portion 112 having a heat spreading surface comprised of a heat receiving region made of a first material that is copper or copper alloy (col. 2, lines 65-67); a frame portion 110 made of second material (col. 2, lines 39-40) interfacing perimeter portion of the heat spreader and having opening traversing the thickness of the frame portion; the thermal conductivity greater than 300 W/mk or 400 W/mk is also disclosed (col. 2, lines 59-61). The method steps are necessitated by the device structure as disclosed by McCormick et al.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over

McCormick et al., Pat. 5,909,057 in view of Edwards et al., Pat. 5,881,945.

McCormick discloses the claimed invention, as shown above, except the metallic coating. Edwards shows the heat spreader structure including the heat conductive coating 28 over at least a portion of the heat spreading portion. It would be obvious to one having ordinary skill in the art at the time the invention was made to have the heat conductive, metallic or any other suitable material layer, as disclosed by Edwards et al. in the structure disclosed by McCormick et al. for optimum heat conduction. The coating to be metallic is obvious since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. This reason is applied to other claims where several different materials are claimed.

6. Claims 8, 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

McCormick et al.

McCormick discloses the claimed invention but . does not specifically indicate that thermal expansion is less than 6 ppm/k but it would be obvious to one having ordinary skill in the art at the time the invention was made to have the thermal expansion limited to claimed number to avoid stress in joined materials. The diffusion bonding is known

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method of joining of two different parts and as method step in the article claim does not render novelty as soon as the structure is disclosed.

7. Claims 4, 5, 12-14, 19, 23, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick et al., Pat. 5,909,057 in view of Edwards et al., Pat. 5,881,945.

McCormick discloses the claimed invention except interface material such as solder or adhesive disposed between the frame and the base portion and between the base portion and the heat generating device. Edwards discloses such materials, therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to use coating materials as disclosed by Edwards in the device disclosed by McCormick et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris L. Chervinsky whose telephone number is 571-272-2039. The examiner can normally be reached on 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash N. Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Boris L. Chervinsky/
Primary Examiner, Art Unit 2835